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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,801	07/23/2003	Anthony C. Zuppero	22122878-70	9026

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EXAMINER

DIAMOND, ALAN D

ART UNIT PAPER NUMBER

1753

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/625,801	<b>Applicant(s)</b> ZUPPERO	
	<b>Examiner</b> Alan Diamond	<b>Art Unit</b> 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32,34,35,39,40,43,44,46,48,52-54,57-63,65,67-72,74-77,79,81-89 and 93-102 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Continuation of Disposition of Claims: Claims pending in the application are 32,34,35,39,40,43,44,46,48,52-54,57-63,65,67-72,74-77,79,81-89 and 93-102.

## **DETAILED ACTION**

### ***Comments***

1. The 35 USC 112, first paragraph, rejections of the claims have been overcome by Applicant's amendment and cancellation of the claims other than the rejection set forth below.
2. The 35 USC 112, second paragraph, rejections of the claims have been overcome by Applicant's amendment or cancellation of the claims.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 74 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 74, at line 3, the "combination thereof" is not supported by the specification, as originally filed.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

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1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 32, 34, 35, 39, 40, 43, 44, 46, 48, 52-54, 57-63, 65, 67-72, 74-77, 79, 81-89, and 93-102 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-37 of U.S. Patent No. 6,649,823. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of said patent do not specifically require that the surface on which the vibrationally excited reaction products collide forms a semiconductor diode with one or more semiconductor elements. However, note that claim 7 of said patent teaches that the converter can be a diode. In view of Figure 3 in said patent, and col. 16, line 42 through col. 17, line 17, said surface can be part of the diode, in particular, the conducting surface (110) corresponds to the surface the claims of said copending application, and said conducting surface forms part of a Schottky diode along with semiconductors (111) and (104). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed said surface in the claims of said patent as part of a diode because such is within the scope of the claims of said patent.

7. Claims 32, 34, 35, 39, 40, 43, 44, 46, 48, 52-54, 57-63, 65, 67-72, 74-77, 79, 81-89, and 93-102 are provisionally rejected under the judicially created doctrine of

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obviousness-type double patenting as being unpatentable over claims 1-8, 27-37, and 42-49 of copending Application No. 10/052,004. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of said copending application do not specifically require that the surface on which the vibrationally excited molecules collide forms a semiconductor diode with one or more semiconductor elements. However, note that claim 31 of said copending application teaches that collecting excited carriers (i.e., hot electrons) can be with a Schottky diode. Note that Figure 2 in said patent is essentially identical to instant Figure 3. Conducting layer (110) in said Figure 2, forms a diode with semiconductor layer (106), and it is the position such that said layer (110) transfers reaction product energy to electrons as here claimed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed said surface in the claims of said copending application as part of a diode because such is within the scope of the claims of said copending application

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Response to Arguments***

8. Applicants' arguments filed August 12, 2005 have been fully considered but they are not persuasive.

Applicants indicate that they will file a terminal disclaimer over U.S. Patent 6,649,823 when all other rejections are resolved, and request that the double patenting rejection over 10/052,004 be withdrawn when all other rejections are resolved.

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However, this argument is not deemed to be persuasive because a terminal disclaimer has not yet been received over U.S. Patent 6,649,823. The double patenting rejection over 10/052,004 has been maintained.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond  
Primary Examiner  
Art Unit 1753

Alan Diamond  
August 22, 2005

A handwritten signature in black ink, appearing to read 'Alan Diamond', with a stylized flourish at the end.